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A NEW MODEL FOR SKY COVER

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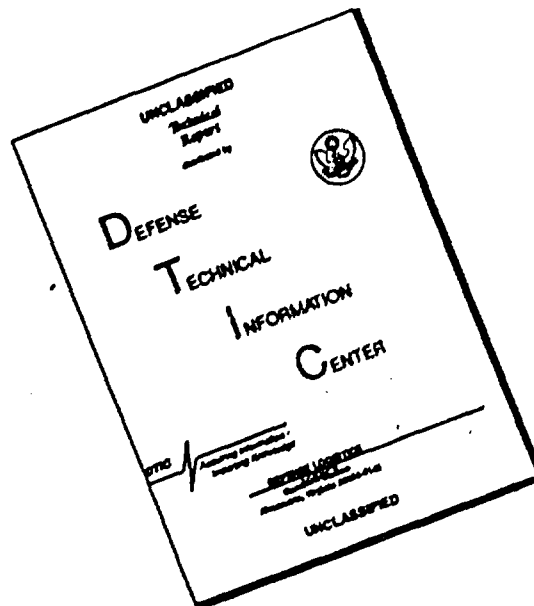
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NAME \_\_\_\_\_  
 ID# \_\_\_\_\_  
 DATE \_\_\_\_\_  
 TIME \_\_\_\_\_  
 BY \_\_\_\_\_  
 DISPOSED \_\_\_\_\_  
 SPECIAL \_\_\_\_\_  
 A

## 1. INTRODUCTION

Sky cover records are available for many stations by month and time of day. To obtain the climatic probability of a sky cover condition at a specific location and for a given day and hour of the day, it is possible to retrieve these records and to obtain an empirical estimate. This can be a slow, cumbersome and costly process. In Scientific Report Number 2, two different models were developed so as to effectively compact the data and make possible rapid recall and reuse. The models were adapted for seven weather stations.

In this report we make use of a third model with two parameters and adapt it to 23 stations. The data used to develop the models was extracted from the "Revised Uniform Summary of Surface Weather Observations" (RUSSWO's) prepared by the Data Processing Division of the Air Weather Service, or the "Summary of Meteorological Observations, Surface" (SMOS) prepared by the Naval Weather Service Detachment. For each station 96 pairs of parameter values were found, one for each three-hour period of the day for each of the twelve months.

## 2. Modeling Skycover

A very elementary method of developing a model for data is the following. First make a histogram of the data, and then "smooth" the histogram to get a frequency distribution (probability density function). The probability of a value of the variable less than some fixed amount is then estimated by the proportion of the area under the frequency distribution to the left of that amount.

There are usually a number of curves or distributions which can be used to "fit" the data. In Scientific Report No. 2 both the Beta distribution and the Johnson  $S_\beta$  distribution were fit for sky cover data from Patrick Air Force Base. For the other six stations, only the Johnson distribution was fit. This was in spite of the fact that for Patrick Air Force Base, the Beta distribution gave a slightly better fit (in terms of the RMS of the differences between the model and the data). Obtaining probabilities using the Beta distribution is not easy. The cumulative probability density function (area under the probability density function to the left of a specified value) is not a closed form function. Thus, to obtain probabilities, tables or numerical integration or other approximate methods are required.

In this report we use what we call the  $S$ -distribution. As the authors intend to demonstrate in a later publication, almost any Beta distribution can be approximated very well with an  $S$ -distribution. Further, the  $S$  distribution has a closed-form cumulative distribution function. That is, probabilities can be obtained by direct substitution and no numerical integration or other approximations are required. The cumulative distribution function is given by

$$F(x) = 1 - (1-x^\alpha)^\beta \quad \alpha, \beta > 0, 0 \leq x \leq 1.$$

The probability density function is given by

$$f(x) = \alpha \beta x^{\alpha-1} (1-x^\alpha)^{\beta-1}$$

There are 11 categories of observed sky cover designated 0., .1, .2, ..., 1.0 in the RUSSO's. The interior boundaries between the eleven categories of skycover were taken to be .05, .15, ..., .95.

## 3. Estimation of the Parameter Values

A standard method of estimation of the parameters of a probability density function is the method of maximum likelihood. The maximum likelihood equations for the  $S$  distribution are

$$\frac{n}{\alpha} + \left[ \frac{n}{\sum \ln(1-x_i^\alpha)} + 1 \right] \sum \frac{x_i^\alpha}{1-x_i^\alpha} \ln x_i + \sum \ln x_i = 0$$

$$\beta = -n / \sum \ln(1-x_i^\alpha).$$

The first equation is solved iteratively for  $\alpha$ , after which  $\beta$  can be obtained directly.

Instead of using the method of maximum likelihood to estimate  $\alpha$  and  $\beta$ , the following method was used\*. The values of the empirical cumulative distribution function were regressed on the  $S$  cumulative distribution function. Thus the resulting values of  $\alpha$  and  $\beta$  were those which minimized the sum of the squares of the differences between the model or theoretical cumulative distribution ( $S$ ) and the empirical cumulative distribution. This is the same as choosing those values of  $\alpha$  and  $\beta$  which minimize the sum of the squares of the differences between the empirical probabilities and the model theoretical probabilities. Since our object is not to estimate  $\alpha$  and  $\beta$  for their own sake, but only as a means of obtaining probabilities, the method has considerable intuitive appeal. It does indeed have a number of desirable properties which the authors intend to develop in a separate publication at a later date.

#### 4. Goodness of Fit of the Models

The goodness of fit of an individual model (specified station), month and hour period was measured in two ways. The root mean square (RMS) of the difference between the empirical and the model cumulative distribution functions at proportions of sky cover of .05, .15, .25, .35, .45, .55, .65, .75, .85, and .95 was calculated. Tables (4.1), (4.2), (4.3) show the root mean squares values for Saigon, Christchurch, Tripoli respectively. The fits for Saigon are average while the fits for Tripoli and Christchurch represent the "best" and "worst" fits, respectively.

Also, for each station, over all months and times of day, the proportion of time that the empirical and model cumulative distribution functions differed by at least .01 was calculated. The results are shown in Table 4.4. It is worth noting that the model values in an overwhelming proportion of cases are larger than the "observed" values for the probability of sky cover of .1 or .9. This is undoubtedly due to an observer's preference for stating "clear skies" rather than 0.1, and "overcast" rather than .9. We believe the model frequencies may thus, on the average, be better values than the "observed" values. This phenomenon would inflate the values of Table 4.4.

The "under-observing" of probabilities of sky cover of .1 and .9 has been noted by Brooks and Carruthers (1953) "Handbook of Statistical Methods in Meteorology", Her Majesty's Stationary Office, London; and mentioned by Essenwanger (1976) in "Applied Statistics in Atmospheric Science, Part A. Frequencies and Curve Fitting", Elsevier Scientific Publishing Company, Amsterdam.

\* A more detailed explanation of the method is planned for Scientific Report Number 8 "Use of Non-linear Regression to Estimate a Cumulative Distribution Function".



# Hour of Day

	<u>01</u>	<u>04</u>	<u>07</u>	<u>10</u>	<u>13</u>	<u>16</u>	<u>19</u>	<u>22</u>
January	.042	.043	.047	.037	.033	.035	.040	.041
February	.048	.059	.058	.036	.037	.045	.047	.050
March	.060	.062	.045	.030	.034	.048	.057	.056
April	.052	.056	.040	.034	.040	.051	.051	.051
May	.036	.045	.043	.038	.036	.043	.042	.025
June	.030	.037	.043	.036	.030	.029	.025	.026
July	.033	.039	.047	.041	.034	.044	.040	.025
August	.028	.038	.044	.044	.029	.028	.034	.030
September	.037	.040	.055	.048	.034	.036	.039	.032
October	.037	.038	.050	.045	.044	.047	.042	.042
November	.047	.047	.050	.043	.045	.049	.045	.042
December	.046	.053	.045	.037	.040	.041	.041	.044

TABLE 4.1

RMS of Individual Fits for Saigon (Sky Cover)

# Hour of Day

	<u>01</u>	<u>04</u>	<u>07</u>	<u>10</u>	<u>13</u>	<u>16</u>	<u>19</u>	<u>22</u>
January	.040	.044	.061	.058	.059	.055	.062	.049
February	.029	.031	.059	.052	.059	.056	.061	.040
March	.026	.025	.061	.064	.061	.064	.060	.036
April	.029	.033	.050	.066	.054	.053	.043	.030
May	.027	.035	.050	.065	.054	.061	.040	.028
June	.026	.024	.035	.067	.062	.061	.040	.032
July	.034	.033	.043	.071	.053	.058	.042	.031
August	.033	.027	.041	.053	.055	.055	.046	.038
September	.035	.030	.055	.068	.055	.056	.052	.036
October	.030	.028	.054	.058	.058	.061	.068	.035
November	.032	.038	.057	.051	.053	.055	.065	.050
December	.032	.039	.066	.061	.050	.058	.071	.059

TABLE 4.2

RMS of Individual Fits for Christchurch (Sky Cover)

# Hour of Day

	<u>01</u>	<u>04</u>	<u>07</u>	<u>10</u>	<u>13</u>	<u>16</u>	<u>19</u>	<u>22</u>
January	.014	.019	.104	.015	.009	.013	.016	.020
February	.018	.013	.010	.011	.011	.010	.012	.019
March	.017	.016	.007	.014	.009	.007	.013	.016
April	.015	.015	.016	.010	.010	.008	.013	.017
May	.016	.011	.010	.013	.012	.009	.011	.015
June	.010	.010	.010	.010	.007	.008	.008	.009
July	.008	.011	.017	.014	.007	.005	.007	.007
August	.007	.008	.012	.016	.008	.006	.003	.007
September	.010	.014	.017	.016	.007	.007	.009	.008
October	.015	.012	.015	.016	.011	.013	.013	.015
November	.012	.018	.013	.014	.016	.013	.017	.014
December	.017	.017	.018	.014	.019	.020	.017	.018

TABLE 4.3

RMS of Individual Fits for Tripoli (Sky Cover)

Ascension Island	.63
Balboa	.45
Bangor	.51
Bedford	.51
Bermuda	.65
Christchurch	.63
Furumaki	.49
Goose	.46
Hill A.F.B.	.37
Lajes Field	.47
Manila	.61
McMurdo	.51
Midway	.59
Mildenhall	.40
Nenana	.44
Okinawa	.54
Patrick A.F.B.	.57
Saigon	.63
Shemya	.37
Thule	.48
Torrejon	.39
Tripoli	.38
Wake Island	.80

TABLE 4.4

Proportion of Time that Empirical and Model  
Cumulative Distribution Functions Differ by at Least .01

Table 4.5 gives the observed and model values for the cumulative distribution function for Patrick Air Force Base for June, 1000 hours.

<u>Sky Cover Proportion</u>	<u>Observed Cumulative Frequency</u>	<u>Model Cumulative Frequency</u>	<u>Difference</u>
.05	.056	.055	.001
.15	.092	.138	-.046
.25	.181	.214	-.033
.35	.275	.288	-.013
.45	.386	.364	.022
.55	.483	.442	.041
.65	.558	.524	.034
.75	.639	.615	.024
.85	.714	.719	-.005
.95	.772	.857	-.085

TABLE 4.5

Observed and model values for the probability  
(cumulative frequency) that sky cover is less  
than the stated amount.

Patrick Air Force Base, June 1000 hours.

### 5. Use of the Models

Suppose one wishes to estimate the probability that the sky cover is less than .1, .5, .8 and .9 at Mildenhall in August at 1600 hours. Using the appropriate table in Section 6, we find that  $\alpha = 1.53069$ ,  $\beta = .38301$ . Substituting these values in the model

$$P[X \leq x] = 1 - (1-x^\alpha)^\beta$$

we estimate the required probabilities at .011, .150, .378 and .518 respectively.

It should be noted that our modeling procedure can be used to estimate  $P[X \leq x]$  for any value of  $x$  (sky cover), and not just the endpoints of the interval listed in the RUSSWO's.

6. Tables of Coefficients of the Individual Models

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

## ASCENSION IS

	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.044429	0.903354	1.19425	1.18696	1.32676	1.33888	1.03474	0.042569
BETA	0.774007	0.43369	0.444414	0.744712	0.97862	1.0996	0.912831	0.908989
FEB	.	.	.	.	.	.	.	.
ALPHA	1.0976	1.23389	1.57884	1.53944	1.80704	1.44881	1.13977	1.04774
BETA	1.42677	1.34476	1.23854	1.40435	1.72745	1.74662	1.29883	1.54703
MAR	.	.	.	.	.	.	.	.
ALPHA	1.0401	1.24686	1.38834	1.4882	1.82096	1.80097	1.13821	1.02114
BETA	1.37444	1.3614	1.04535	1.26503	1.52054	1.52479	1.29343	1.82848
APR	.	.	.	.	.	.	.	.
ALPHA	1.19095	1.39783	1.79223	1.62882	1.42492	1.52366	1.52884	1.00985
BETA	1.08399	1.15489	1.00792	1.00386	0.981625	0.919292	0.999211	1.08717
MAY	.	.	.	.	.	.	.	.
ALPHA	1.24188	1.35294	1.41833	1.43784	1.88386	1.40982	1.53807	1.22332
BETA	1.26821	1.34389	1.00889	1.07245	1.29438	1.21461	1.38473	1.40737
JUNE	.	.	.	.	.	.	.	.
ALPHA	1.21311	1.25322	1.48614	1.56314	1.42888	1.40186	1.2846	1.17472
BETA	1.26878	1.04469	1.00043	1.07113	1.23489	1.18288	1.1886	1.38982
JULY	.	.	.	.	.	.	.	.
ALPHA	1.39687	1.24838	1.52481	1.28938	1.36178	1.34174	1.07832	1.10139
BETA	1.33629	1.00812	0.804857	0.92682	1.11446	1.13383	1.12648	1.27136
AUG	.	.	.	.	.	.	.	.
ALPHA	1.03998	1.11381	1.48823	1.37084	1.33674	1.38868	1.1049	0.989187
BETA	0.602613	0.829393	0.829988	0.62128	0.77318	0.778882	0.742387	0.681484
SEPT	.	.	.	.	.	.	.	.
ALPHA	1.17794	1.52768	1.54812	1.88828	1.89087	1.24976	1.04492	0.988798
BETA	0.398389	0.548468	0.300093	0.408674	0.837918	0.842167	0.671849	0.428881
OCT	.	.	.	.	.	.	.	.
ALPHA	0.978342	1.38846	1.77118	1.91774	2.009	1.64886	1.12689	0.984822
BETA	0.274084	0.281672	0.319268	0.481118	0.636028	0.688973	0.414887	0.336481
NOV	.	.	.	.	.	.	.	.
ALPHA	1.06329	1.31788	1.67427	1.66688	1.89399	1.84892	1.19818	0.984884
BETA	0.339232	0.311488	0.338784	0.461888	0.63473	0.889881	0.448146	0.384381
DEC	.	.	.	.	.	.	.	.
ALPHA	0.838632	0.908231	1.21388	1.48882	1.47226	1.38882	1.03948	0.748189
BETA	0.479817	0.482917	0.421864	0.897829	0.788438	0.772627	0.646889	0.87884



PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	BALBOA							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.156306	0.1793	0.435793	0.771715	1.55456	1.0054	0.379636	0.223279
BETA	0.689387	0.689394	0.743835	0.811699	1.02566	0.782563	0.609401	0.725474
FEB	.	.	.	.	.	.	.	.
ALPHA	0.151707	0.189764	0.571823	0.998609	1.6827	1.21521	0.553825	0.277726
BETA	0.788438	0.789899	0.849958	1.02175	1.14592	0.883923	0.862126	0.983613
MAR	.	.	.	.	.	.	.	.
ALPHA	0.149971	0.284263	0.554006	0.996855	1.60421	1.04709	0.431238	0.207439
BETA	0.648913	0.767417	0.680548	0.761411	0.815891	0.636796	0.676228	0.782883
APR	.	.	.	.	.	.	.	.
ALPHA	0.232564	0.387246	0.847714	1.48251	2.26422	1.82552	0.707021	0.30015
BETA	0.579909	0.687141	0.531364	0.562037	0.558711	0.475443	0.503122	0.584678
MAY	.	.	.	.	.	.	.	.
ALPHA	0.510929	0.453626	1.73973	2.60067	3.20612	3.57425	1.37537	0.58853
BETA	0.38455	0.414884	0.353041	0.384895	0.339939	0.268614	0.228914	0.309675
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.804804	0.98084	2.49763	2.69507	3.22077	3.80965	2.62012	0.939258
BETA	0.410437	0.416469	0.306718	0.25219	0.26423	0.214372	0.209473	0.297863
JULY	.	.	.	.	.	.	.	.
ALPHA	0.897066	1.01386	1.87475	2.49351	3.43576	3.97942	1.88725	0.871749
BETA	0.393838	0.394105	0.242282	0.228178	0.223919	0.188614	0.159759	0.270397
AUG	.	.	.	.	.	.	.	.
ALPHA	0.88605	0.840104	1.98795	2.57376	3.60986	4.03628	1.80385	1.11814
BETA	0.438389	0.372215	0.264082	0.230057	0.239853	0.186224	0.189528	0.329292
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.956637	1.10389	2.29519	2.78199	2.80547	4.49533	2.28129	1.30823
BETA	0.338719	0.443847	0.287395	0.281603	0.223888	0.198493	0.178272	0.304876
OCT	.	.	.	.	.	.	.	.
ALPHA	1.02853	1.08325	1.84609	2.91944	3.13676	3.89835	1.8478	1.22441
BETA	0.408023	0.468637	0.298382	0.318778	0.287575	0.226699	0.171438	0.30678
NOV	.	.	.	.	.	.	.	.
ALPHA	0.962389	1.03051	1.50712	2.88874	2.65626	2.82828	1.28875	0.789816
BETA	0.523862	0.587171	0.370881	0.367773	0.308164	0.241989	0.209815	0.226372
DEC	.	.	.	.	.	.	.	.
ALPHA	0.308786	0.294195	0.628971	0.943046	1.74747	1.20848	0.511636	0.310671
BETA	0.542682	0.527419	0.483873	0.491525	0.529888	0.389841	0.343253	0.447896

PARAMETERS FOR S-DISTRIBUTION - BAY LOVER

	BANGKOK							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0130479	0.0134434	0.0844796	0.119364	0.137189	0.114424	0.0392923	0.0228279
BETA	0.114498	0.114743	0.150392	0.157722	0.157003	0.158814	0.142633	0.130421
FEB								
ALPHA	0.00945393	0.00895714	0.0552243	0.0885607	0.124941	0.142913	0.0493924	0.020439
BETA	0.120434	0.109479	0.143972	0.155462	0.163496	0.17388	0.180731	0.151553
MAR								
ALPHA	0.0142488	0.0305842	0.128801	0.194599	0.149444	0.125134	0.0478992	0.0250079
BETA	0.125132	0.140282	0.144812	0.187421	0.172247	0.165976	0.169207	0.142489
APR								
ALPHA	0.0216773	0.0592444	0.127096	0.271917	0.398449	0.303324	0.172542	0.0457832
BETA	0.116344	0.132801	0.139055	0.171909	0.189484	0.185404	0.179579	0.144284
MAY								
ALPHA	0.0418102	0.148121	0.195098	0.38228	0.544418	0.545185	0.344839	0.0442677
BETA	0.15748	0.192492	0.173487	0.210277	0.239133	0.234548	0.237964	0.174348
JUNE								
ALPHA	0.072484	0.250745	0.258718	0.529811	0.889337	0.751029	0.524548	0.186734
BETA	0.192232	0.21448	0.196018	0.241934	0.315877	0.31889	0.283415	0.254097
JULY								
ALPHA	0.0458039	0.245381	0.244237	0.550027	1.01434	0.859919	0.539532	0.184888
BETA	0.19422	0.239738	0.221415	0.318485	0.4524	0.420471	0.347384	0.284283
AUG								
ALPHA	0.0189305	0.0849175	0.179703	0.447739	0.825885	0.65119	0.347589	0.0832891
BETA	0.153427	0.19105	0.204204	0.327518	0.413354	0.40045	0.348489	0.239494
SEPT								
ALPHA	0.0189802	0.0587943	0.153482	0.354381	0.457383	0.37851	0.182019	0.0317817
BETA	0.172771	0.201688	0.211489	0.293354	0.320404	0.324734	0.293334	0.281774
OCT								
ALPHA	0.0174219	0.0339452	0.143313	0.212397	0.28992	0.226382	0.0849494	0.0162797
BETA	0.148833	0.163439	0.18941	0.216944	0.281259	0.224727	0.218785	0.143841
NOV								
ALPHA	0.0344944	0.0324043	0.152424	0.233219	0.243382	0.223982	0.0418889	0.0223889
BETA	0.11435	0.115382	0.14448	0.148718	0.162443	0.172274	0.148731	0.119176
DEC								
ALPHA	0.00892604	0.0188771	0.124482	0.181007	0.228915	0.148329	0.0442472	0.0168313
BETA	0.109182	0.120193	0.178312	0.175997	0.193018	0.188431	0.148488	0.128013

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

BEDFORD

	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.00457925	0.0116937	0.0444323	0.0942554	0.146774	0.132328	0.0374595	0.0174149
BETA	0.100959	0.115449	0.142775	0.151006	0.172134	0.180113	0.150375	0.13415
FEB	.	.	.	.	.	.	.	.
ALPHA	0.00290841	0.00409501	0.0044175	0.108272	0.146004	0.141152	0.041534	0.0184045
BETA	0.103278	0.10259	0.169437	0.167684	0.181925	0.205235	0.194131	0.148768
MAR	.	.	.	.	.	.	.	.
ALPHA	0.0118544	0.0208157	0.0890982	0.127544	0.176109	0.196144	0.108516	0.033518
BETA	0.124782	0.141744	0.170039	0.181978	0.185414	0.197278	0.192023	0.151245
APR	.	.	.	.	.	.	.	.
ALPHA	0.0214537	0.0517158	0.1092	0.238121	0.304364	0.338035	0.180903	0.0439927
BETA	0.129492	0.147263	0.158451	0.191709	0.202803	0.217816	0.207375	0.152516
MAY	.	.	.	.	.	.	.	.
ALPHA	0.0470038	0.118155	0.184221	0.28534	0.490407	0.495382	0.27949	0.0945842
BETA	0.165398	0.178198	0.186749	0.219307	0.26094	0.272585	0.232922	0.196765
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.0544199	0.195419	0.168735	0.355302	0.756042	0.669861	0.427007	0.153014
BETA	0.200047	0.249678	0.210949	0.27709	0.358548	0.354563	0.314425	0.267813
JULY	.	.	.	.	.	.	.	.
ALPHA	0.0791841	0.169124	0.228391	0.454057	0.953848	0.784216	0.48832	0.197081
BETA	0.249008	0.252538	0.243224	0.327694	0.477082	0.436973	0.376765	0.336069
AUG	.	.	.	.	.	.	.	.
ALPHA	0.0442343	0.0991997	0.179175	0.352944	0.826581	0.599048	0.34463	0.093474
BETA	0.213803	0.229492	0.232838	0.318605	0.433173	0.425642	0.38363	0.264521
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.0153879	0.0317835	0.0851104	0.182475	0.338837	0.281091	0.131513	0.0265497
BETA	0.169298	0.186771	0.196848	0.257209	0.330553	0.331504	0.271216	0.207242
OCT	.	.	.	.	.	.	.	.
ALPHA	0.0123881	0.0201514	0.117655	0.199405	0.195206	0.155382	0.0789177	0.028717
BETA	0.175058	0.189629	0.223319	0.247573	0.272134	0.272338	0.238448	0.195197
NOV	.	.	.	.	.	.	.	.
ALPHA	0.00964237	0.0197534	0.157724	0.208891	0.258454	0.195724	0.0428891	0.0231888
BETA	0.122425	0.149581	0.200663	0.199349	0.215889	0.26764	0.174934	0.149284
DEC	.	.	.	.	.	.	.	.
ALPHA	0.00871723	0.00993385	0.0754024	0.119891	0.214183	0.121481	0.0222694	0.0143737
BETA	0.125932	0.12625	0.173889	0.177967	0.217873	0.202079	0.148988	0.141421

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

## BERMUDA

JAN	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
ALPHA	0.83297	0.794413	1.0585	1.10617	1.06296	1.01437	0.944685	0.857842
BETA	0.549011	0.484401	0.485964	0.455111	0.433459	0.438018	0.464161	0.541439
FEB	.	.	.	.	.	.	.	.
ALPHA	0.686314	0.712838	1.08072	1.10117	1.04985	1.10862	1.07132	0.888804
BETA	0.385051	0.35339	0.403141	0.396255	0.429346	0.407867	0.433171	0.423357
MAR	.	.	.	.	.	.	.	.
ALPHA	0.782166	0.780112	1.125	1.03534	1.04845	0.938365	1.02115	0.84109
BETA	0.417984	0.381426	0.432499	0.442901	0.464511	0.399157	0.438533	0.461011
APR	.	.	.	.	.	.	.	.
ALPHA	0.599488	0.703827	0.940044	0.870756	0.746065	0.738533	0.729907	0.592965
BETA	0.495026	0.52425	0.499364	0.508024	0.461914	0.462934	0.454289	0.498275
MAY	.	.	.	.	.	.	.	.
ALPHA	0.545532	0.638932	0.894423	0.844402	0.826116	0.763701	0.781234	0.618882
BETA	0.478154	0.460137	0.453162	0.476583	0.474939	0.417046	0.435788	0.49434
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.44943	0.822281	1.15184	1.0894	1.1254	1.04948	0.988344	0.741272
BETA	0.568309	0.545516	0.503901	0.481887	0.507767	0.467721	0.475874	0.57534
JULY	.	.	.	.	.	.	.	.
ALPHA	1.00946	1.11148	1.20105	1.1817	1.1517	1.1188	0.991311	1.03482
BETA	1.53384	1.47147	1.04834	0.963101	0.878638	0.81908	0.78998	1.33976
AUG	.	.	.	.	.	.	.	.
ALPHA	0.994876	0.994594	1.11977	1.06957	1.0806	1.11983	1.04884	1.01144
BETA	1.54665	1.4551	1.01909	0.911453	0.83742	0.807582	0.822962	1.38481
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.8969	0.911559	1.09994	1.106.9	1.19439	1.19839	1.08883	0.989877
BETA	1.04961	1.04605	0.766844	0.677892	0.69165	0.657324	0.728895	0.982869
OCT	.	.	.	.	.	.	.	.
ALPHA	0.698881	0.667478	0.976744	0.981275	1.08417	0.988892	0.889711	0.788844
BETA	0.566625	0.554805	0.511563	0.479441	0.508852	0.452482	0.489566	0.534623
NOV	.	.	.	.	.	.	.	.
ALPHA	0.731316	0.724871	1.04368	0.943878	1.088	0.949139	0.888753	0.798386
BETA	0.593109	0.588576	0.626183	0.463264	0.528864	0.494346	0.552895	0.68988
DEC	.	.	.	.	.	.	.	.
ALPHA	0.76848	0.714398	1.01722	1.0986	0.989143	0.993663	0.894988	0.786611
BETA	0.536427	0.58277	0.532196	0.498475	0.498821	0.467636	0.589981	0.538897

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

CHRISTCHURCH

JAN	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
ALPHA	0.300582	0.39237	0.993171	1.09582	1.09882	0.928305	0.876599	0.721648
BETA	0.263875	0.271783	0.390166	0.45985	0.505432	0.488289	0.437704	0.368313
FEB	.	.	.	.	.	.	.	.
ALPHA	0.139979	0.250846	0.750413	0.854873	0.685878	0.694366	0.64188	0.380374
BETA	0.221282	0.246696	0.334215	0.423687	0.41783	0.4253	0.359055	0.302926
MAR	.	.	.	.	.	.	.	.
ALPHA	0.173259	0.201004	0.447083	0.876824	1.0085	0.87847	0.667132	0.454794
BETA	0.217831	0.236502	0.329497	0.376023	0.449168	0.433549	0.349238	0.323131
APR	.	.	.	.	.	.	.	.
ALPHA	0.187733	0.194117	0.348608	0.593027	0.6518	0.534335	0.468894	0.282383
BETA	0.249004	0.255487	0.29249	0.373573	0.43816	0.41117	0.382338	0.322621
MAY	.	.	.	.	.	.	.	.
ALPHA	0.165208	0.202043	0.405237	0.722722	0.752695	0.62396	0.366787	0.238848
BETA	0.237331	0.251759	0.305632	0.377249	0.404662	0.38391	0.315696	0.257776
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.124377	0.15022	0.216472	0.370912	0.457752	0.48056	0.316127	0.199976
BETA	0.247027	0.261024	0.28383	0.32795	0.394598	0.39729	0.338441	0.28168
JULY	.	.	.	.	.	.	.	.
ALPHA	0.121015	0.142076	0.232341	0.490029	0.545402	0.48727	0.328459	0.178946
BETA	0.230341	0.237307	0.267954	0.318271	0.359532	0.368358	0.342141	0.278487
AUG	.	.	.	.	.	.	.	.
ALPHA	0.159984	0.152556	0.271531	0.552349	0.622683	0.480593	0.35483	0.202377
BETA	0.25749	0.268247	0.295809	0.366083	0.422232	0.417766	0.368209	0.296625
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.193646	0.236367	0.522542	0.644409	0.672065	0.67633	0.625465	0.308831
BETA	0.243004	0.271988	0.336572	0.359866	0.412319	0.418271	0.365468	0.296888
OCT	.	.	.	.	.	.	.	.
ALPHA	0.194209	0.246414	0.450765	0.606761	0.673626	0.559049	0.478074	0.300338
BETA	0.284406	0.330277	0.366782	0.40836	0.491117	0.455645	0.377583	0.330736
NOV	.	.	.	.	.	.	.	.
ALPHA	0.277535	0.33214	0.690724	0.684989	0.79378	0.816631	0.929151	0.556177
BETA	0.329936	0.338396	0.410253	0.428172	0.486155	0.478436	0.432119	0.379325
DEC	.	.	.	.	.	.	.	.
ALPHA	0.322769	0.468026	0.781014	0.870918	0.943892	0.984902	1.11183	0.695706
BETA	0.280992	0.317063	0.375331	0.423227	0.522871	0.484091	0.412603	0.376162

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	FURUMAI							
	0-2	3-5	4-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.417733	0.553653	0.913024	1.07498	1.32531	1.11877	0.63493	0.535161
BETA	0.24852	0.264386	0.339091	0.393457	0.396936	0.398986	0.340779	0.299649
FEB								
ALPHA	0.403134	0.442357	0.696614	0.854391	1.03739	0.924973	0.573708	0.425127
BETA	0.284442	0.270164	0.324179	0.36445	0.370385	0.372536	0.358006	0.301378
MAR								
ALPHA	0.224447	0.285043	0.510775	0.593418	0.902221	0.782772	0.452776	0.254511
BETA	0.27098	0.284526	0.291457	0.293716	0.310938	0.302133	0.28035	0.257563
APR								
ALPHA	0.0483549	0.141796	0.239463	0.334655	0.558417	0.405775	0.257846	0.181802
BETA	0.168699	0.204328	0.198335	0.203889	0.244422	0.209939	0.210315	0.187616
MAY								
ALPHA	0.0694887	0.135841	0.180093	0.319314	0.382626	0.34248	0.237619	0.0949849
BETA	0.16516	0.174463	0.165021	0.189188	0.196254	0.183732	0.19093	0.177796
JUNE								
ALPHA	0.0967586	0.245253	0.32017	0.522116	0.498951	0.472234	0.413497	0.154134
BETA	0.112008	0.122767	0.120189	0.153676	0.175583	0.168893	0.151803	0.12675
JULY								
ALPHA	0.11334	0.302818	0.644591	0.686867	0.657962	0.592379	0.582159	0.28736
BETA	0.1048	0.110165	0.12968	0.169141	0.182733	0.177362	0.166623	0.129461
AUG								
ALPHA	0.168069	0.276068	0.514201	0.870285	0.999288	0.839638	0.638144	0.251846
BETA	0.165265	0.169714	0.170734	0.227256	0.288431	0.24371	0.222216	0.191697
SEPT								
ALPHA	0.173934	0.214563	0.50515	0.854401	0.941129	0.77471	0.560081	0.268487
BETA	0.194943	0.199354	0.228087	0.267735	0.277752	0.248542	0.259724	0.221577
OCT								
ALPHA	0.155115	0.169147	0.475476	0.527261	0.638293	0.438047	0.249332	0.186172
BETA	0.267349	0.272432	0.329046	0.324883	0.346634	0.299317	0.279484	0.272883
NOV								
ALPHA	0.247126	0.244813	0.623159	0.781596	0.938062	0.788324	0.328898	0.271734
BETA	0.294234	0.279118	0.339313	0.381895	0.392383	0.37466	0.38666	0.291789
DEC								
ALPHA	0.426994	0.437928	0.766105	0.888814	1.09424	0.927673	0.573861	0.489888
BETA	0.341812	0.316697	0.352491	0.397118	0.417619	0.384969	0.347766	0.34849

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	0008E							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0390512	0.0251392	0.0947722	0.201094	0.254139	0.227187	0.0791505	0.0517441
BETA	0.135119	0.113293	0.153777	0.177327	0.194259	0.178046	0.13512	0.144248
FEB	.	.	.	.	.	.	.	.
ALPHA	0.0374417	0.0272414	0.151018	0.210917	0.240348	0.295141	0.135745	0.0470071
BETA	0.141818	0.132434	0.191717	0.207534	0.219145	0.233419	0.202822	0.144515
MAR	.	.	.	.	.	.	.	.
ALPHA	0.0330898	0.0507224	0.224342	0.234949	0.300187	0.330004	0.188593	0.0401228
BETA	0.115852	0.12134	0.163403	0.144584	0.183024	0.202803	0.180474	0.138824
APR	.	.	.	.	.	.	.	.
ALPHA	0.0532349	0.147808	0.309438	0.442723	0.531435	0.513477	0.395181	0.117894
BETA	0.101447	0.128941	0.144505	0.183775	0.19882	0.1943	0.177428	0.128471
MAY	.	.	.	.	.	.	.	.
ALPHA	0.219547	0.418331	0.700527	0.909572	0.743944	0.735035	0.474419	0.374138
BETA	0.172431	0.229755	0.220499	0.270738	0.243037	0.27548	0.288431	0.209282
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.437478	0.744138	0.74123	1.02407	1.34441	1.4941	1.13458	0.589781
BETA	0.244285	0.284489	0.254908	0.287035	0.350588	0.381371	0.348494	0.304727
JULY	.	.	.	.	.	.	.	.
ALPHA	0.379149	0.775701	0.834575	1.24707	1.94191	1.72377	1.38442	0.483884
BETA	0.252447	0.294107	0.288178	0.348457	0.470939	0.488141	0.412344	0.339974
AUG	.	.	.	.	.	.	.	.
ALPHA	0.250211	0.519905	0.759897	1.28052	1.8784	1.64342	1.04841	0.444897
BETA	0.248424	0.30092	0.325707	0.408214	0.483859	0.441229	0.392414	0.304154
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.177874	0.235903	0.734935	1.27501	1.99004	1.88084	0.797539	0.284844
BETA	0.218208	0.23239	0.308524	0.374597	0.443448	0.472183	0.348348	0.238878
OCT	.	.	.	.	.	.	.	.
ALPHA	0.154453	0.204428	0.7228	0.94408	1.1905	0.944443	0.371794	0.17714
BETA	0.161751	0.178044	0.259871	0.27299	0.292101	0.27098	0.209183	0.178474
NOV	.	.	.	.	.	.	.	.
ALPHA	0.140208	0.144307	0.379433	0.571057	0.701983	0.582041	0.222981	0.148343
BETA	0.124438	0.135891	0.170241	0.184303	0.202789	0.197254	0.125	0.128443
DEC	.	.	.	.	.	.	.	.
ALPHA	0.0407774	0.0489785	0.144258	0.404738	0.452428	0.344488	0.132807	0.0757783
BETA	0.157463	0.144743	0.178994	0.234444	0.289744	0.239448	0.204153	0.147889

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	MILL							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0754831	0.0457983	0.101562	0.180888	0.184461	0.259137	0.193226	0.114507
BETA	0.157873	0.134351	0.134246	0.133357	0.135461	0.154085	0.170059	0.167257
FEB								
ALPHA	0.0489312	0.0544525	0.154572	0.245472	0.303844	0.304351	0.200853	0.116739
BETA	0.178142	0.159048	0.170238	0.168186	0.182053	0.182851	0.19342	0.192139
MAR								
ALPHA	0.061422	0.0559048	0.144792	0.214804	0.325346	0.342167	0.224401	0.100088
BETA	0.196914	0.181773	0.179617	0.190192	0.208339	0.21172	0.21222	0.206696
APR								
ALPHA	0.0450095	0.0734378	0.182408	0.227784	0.399454	0.386825	0.272804	0.141897
BETA	0.212249	0.20581	0.204894	0.20458	0.240504	0.238024	0.221741	0.234939
MAY								
ALPHA	0.148721	0.179842	0.20924	0.247738	0.405024	0.399969	0.311126	0.23447
BETA	0.33721	0.32287	0.272332	0.287002	0.33337	0.299927	0.269046	0.330234
JUNE								
ALPHA	0.0935611	0.127547	0.141879	0.148759	0.242115	0.28276	0.190882	0.132888
BETA	0.371202	0.345677	0.334299	0.345815	0.404638	0.378333	0.322778	0.36152
JULY								
ALPHA	0.126615	0.20033	0.20738	0.184349	0.304057	0.321133	0.214332	0.174368
BETA	0.544583	0.455215	0.574754	0.591244	0.777729	0.667313	0.469733	0.511887
AUG								
ALPHA	0.117507	0.154229	0.226353	0.214979	0.343928	0.366745	0.238781	0.162887
BETA	0.492898	0.552077	0.552752	0.548337	0.706352	0.653339	0.46183	0.496834
SEPT								
ALPHA	0.0397117	0.0451128	0.110073	0.122823	0.158181	0.197441	0.133891	0.0498218
BETA	0.349328	0.344457	0.396848	0.434389	0.45902	0.484256	0.422911	0.398837
OCT								
ALPHA	0.0271967	0.0307553	0.0803465	0.090111	0.137804	0.148897	0.0988823	0.0348788
BETA	0.278834	0.280574	0.278976	0.277238	0.308821	0.295339	0.308828	0.274467
NOV								
ALPHA	0.0402819	0.0389142	0.114812	0.138381	0.228978	0.188383	0.148488	0.0408957
BETA	0.194928	0.190624	0.208878	0.187767	0.196773	0.184657	0.21686	0.208636
DEC								
ALPHA	0.0547486	0.0458143	0.128119	0.293188	0.288344	0.237717	0.137938	0.0764447
BETA	0.1273	0.132878	0.149994	0.16026	0.188986	0.148727	0.188882	0.141853



# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

## LAJES FIELD

JAN	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
ALPHA	0.873188	0.913568	1.45692	1.82005	1.92205	1.91985	1.02067	0.882705
BETA	0.326824	0.331614	0.35445	0.332894	0.355198	0.353302	0.312149	0.321488
FEB	.	.	.	.	.	.	.	.
ALPHA	0.916265	0.87611	1.48203	2.11941	2.1926	1.91027	1.101	0.848564
BETA	0.328071	0.305348	0.337178	0.348637	0.376925	0.367194	0.301249	0.313766
MAR	.	.	.	.	.	.	.	.
ALPHA	0.773818	0.741551	1.33608	1.58202	1.59892	1.56488	1.12469	0.82073
BETA	0.327295	0.294216	0.327853	0.34052	0.361988	0.359698	0.338723	0.344144
APR	.	.	.	.	.	.	.	.
ALPHA	0.711074	0.791952	1.45293	1.86778	1.57663	1.64766	1.08367	0.739404
BETA	0.316105	0.303846	0.337954	0.39235	0.390399	0.406999	0.338138	0.32986
MAY	.	.	.	.	.	.	.	.
ALPHA	0.480748	0.877449	1.50447	1.58536	1.67829	1.59491	1.24682	0.761922
BETA	0.362678	0.333959	0.356357	0.402478	0.473434	0.461391	0.402844	0.36843
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.465353	0.743054	1.2742	1.50244	1.59317	1.52302	1.07687	0.546638
BETA	0.322648	0.310124	0.369084	0.444621	0.518357	0.503241	0.40388	0.349774
JULY	.	.	.	.	.	.	.	.
ALPHA	0.372878	0.543418	0.814655	1.15741	1.24495	1.31308	0.96891	0.475827
BETA	0.342185	0.372883	0.403389	0.52189	0.632867	0.677987	0.528998	0.394611
AUG	.	.	.	.	.	.	.	.
ALPHA	0.475086	0.580169	0.958327	1.22896	1.31122	1.28174	0.886128	0.566784
BETA	0.475981	0.477953	0.518175	0.642972	0.769294	0.773638	0.631891	0.584847
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.555154	0.702822	1.1644	1.3711	1.43117	1.36711	0.882712	0.621486
BETA	0.494467	0.566093	0.531218	0.57387	0.610293	0.596899	0.538629	0.488844
OCT	.	.	.	.	.	.	.	.
ALPHA	0.682936	0.836302	1.59266	1.86833	2.00398	1.76071	1.0837	0.772729
BETA	0.348364	0.38442	0.487381	0.461777	0.5238	0.478694	0.384884	0.386888
NOV	.	.	.	.	.	.	.	.
ALPHA	0.837321	0.748988	1.451	1.71329	2.09499	2.01068	1.13747	0.842386
BETA	0.338883	0.316446	0.360493	0.378846	0.458988	0.434488	0.378829	0.321914
DEC	.	.	.	.	.	.	.	.
ALPHA	0.877284	0.98946	1.87389	2.02338	2.08867	1.84022	1.03821	0.98891
BETA	0.339889	0.348888	0.369334	0.388821	0.388224	0.381923	0.318834	0.384988

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

## MANILA

	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.784244	0.743847	0.898944	0.943914	0.978952	1.03313	0.784223	0.712789
BETA	0.433337	0.398989	0.311184	0.491748	0.43515	0.53813	0.318344	0.394548
FEB								
ALPHA	0.723828	0.729838	0.889884	0.931185	0.877882	0.821612	0.724499	0.697192
BETA	0.839942	0.748933	0.483484	0.480967	0.589293	0.612388	0.698989	0.849181
MAR								
ALPHA	0.783497	0.494884	0.726895	0.771847	0.818444	0.482811	0.4419	0.783188
BETA	1.12488	1.03713	0.7781	0.767182	0.778984	0.713881	0.748114	1.13174
APR								
ALPHA	0.498215	0.898111	0.823829	0.884282	0.878488	0.891484	0.718134	0.724487
BETA	1.0984	1.32672	0.934491	0.984982	0.893894	0.897281	0.878388	1.24818
MAY								
ALPHA	0.834847	1.0044	0.833414	0.949149	1.02743	0.981372	0.698437	0.742879
BETA	0.849788	1.01583	0.45884	0.784384	0.729485	0.433237	0.492194	0.788431
JUNE								
ALPHA	1.00842	1.01912	1.13382	1.29842	1.24814	1.43498	1.24982	1.03178
BETA	0.412397	0.444978	0.342384	0.341681	0.338413	0.31411	0.297284	0.389444
JULY								
ALPHA	1.22184	1.27433	1.82432	1.48745	1.89317	1.43989	1.38843	1.08981
BETA	0.312454	0.344884	0.314492	0.257189	0.242132	0.219287	0.28722	0.28838
AUG								
ALPHA	1.34131	1.26183	1.38287	1.87911	1.87841	1.4494	1.53873	1.29924
BETA	0.225251	0.238432	0.215921	0.234833	0.283989	0.162764	0.148948	0.284448
SEPT								
ALPHA	1.22841	1.37764	1.82289	2.08847	2.03811	2.04367	1.43847	1.299
BETA	0.216257	0.281982	0.238438	0.238384	0.234214	0.184421	0.144887	0.28349
OCT								
ALPHA	0.771884	0.928421	0.978284	0.972244	1.13777	1.2487	0.984943	0.778972
BETA	0.249379	0.442339	0.343413	0.348181	0.384823	0.334481	0.314811	0.388882
NOV								
ALPHA	0.724728	0.748899	0.931881	0.938482	1.23832	1.14814	0.818224	0.42818
BETA	0.538434	0.324813	0.424248	0.487484	0.484841	0.388237	0.417812	0.881342
DEC								
ALPHA	0.774344	0.743881	0.887424	1.04128	1.1394	1.04888	0.472279	0.422788
BETA	0.894878	0.539381	0.438498	0.448127	0.421117	0.417888	0.443412	0.528989

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	MCURDO							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.363512	0.37842	0.347318	0.417781	0.391827	0.37544	0.379115	0.384327
BETA	0.309223	0.297054	0.272194	0.293004	0.309331	0.322511	0.328444	0.325114
FEB	.	.	.	.	.	.	.	.
ALPHA	0.414938	0.440273	0.404254	0.440303	0.387777	0.404531	0.397977	0.418518
BETA	0.18937	0.195134	0.183978	0.188547	0.176792	0.190201	0.183995	0.194493
MAR	.	.	.	.	.	.	.	.
ALPHA	0.238479	0.300443	0.351381	0.326304	0.412059	0.417434	0.381198	0.28128
BETA	0.164203	0.172025	0.170149	0.179923	0.204063	0.194774	0.188739	0.164153
APR	.	.	.	.	.	.	.	.
ALPHA	0.128113	0.0453924	0.0830309	0.151943	0.302208	0.252194	0.218957	0.144049
BETA	0.221387	0.174452	0.174243	0.153395	0.17101	0.148888	0.160323	0.191218
MAY	.	.	.	.	.	.	.	.
ALPHA	0.0354571	0.0373284	0.0211929	0.044454	0.0884447	0.104579	0.0898974	0.0284882
BETA	0.189504	0.193438	0.164741	0.200031	0.200125	0.209534	0.212998	0.20912
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.0291129	0.0418544	0.0229187	0.0730477	0.0675501	0.0771047	0.0411731	0.0394789
BETA	0.157987	0.166195	0.150204	0.195961	0.187844	0.17543	0.164619	0.178519
JULY	.	.	.	.	.	.	.	.
ALPHA	0.0350451	0.0482267	0.0255591	0.0278929	0.0413723	0.0928911	0.0379957	0.0284843
BETA	0.210547	0.217291	0.199534	0.207512	0.235547	0.239473	0.216383	0.192498
AUG	.	.	.	.	.	.	.	.
ALPHA	0.0515734	0.0491038	0.0431424	0.0467422	0.130501	0.17254	0.112212	0.042574
BETA	0.236293	0.219087	0.220776	0.200004	0.179287	0.213153	0.248888	0.208573
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.0700949	0.0921788	0.107307	0.154937	0.1607	0.182488	0.125611	0.130182
BETA	0.200334	0.220201	0.180486	0.186058	0.19233	0.199872	0.19257	0.228314
OCT	.	.	.	.	.	.	.	.
ALPHA	0.182835	0.190003	0.197424	0.17512	0.185994	0.194124	0.161186	0.163335
BETA	0.223901	0.210495	0.214297	0.204088	0.21733	0.224993	0.213848	0.214837
NOV	.	.	.	.	.	.	.	.
ALPHA	0.353044	0.310853	0.285909	0.284878	0.307227	0.319975	0.308494	0.312484
BETA	0.301332	0.284795	0.264223	0.289539	0.279728	0.288895	0.311918	0.308215
DEC	.	.	.	.	.	.	.	.
ALPHA	0.264522	0.275345	0.22334	0.301182	0.274541	0.24178	0.262122	0.223819
BETA	0.247383	0.241345	0.25211	0.251744	0.252924	0.288522	0.290884	0.248528

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	MIDWAY							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.690794	0.738209	1.05527	1.23478	1.09738	1.15475	1.05006	0.7736
BETA	0.504987	0.543422	0.62298	0.620966	0.565218	0.543727	0.510187	0.494846
FEB								
ALPHA	0.761823	0.720701	1.077	1.12461	0.989517	1.08456	0.938365	0.760977
BETA	0.581033	0.527608	0.590334	0.523102	0.523251	0.556198	0.47788	0.524524
MAR								
ALPHA	0.729796	0.801424	1.26664	1.47004	1.21485	1.27874	1.34768	0.818375
BETA	0.409723	0.426872	0.430515	0.458887	0.447598	0.458534	0.49051	0.448992
APR								
ALPHA	0.682253	0.783466	1.35162	1.05044	1.09616	1.2115	1.26599	0.736147
BETA	0.440481	0.46183	0.520058	0.470127	0.52234	0.52414	0.469366	0.447165
MAY								
ALPHA	0.797449	0.758938	1.33476	1.13361	1.04951	1.12245	1.26806	0.860485
BETA	0.687426	0.625849	0.616078	0.613016	0.626617	0.659498	0.676908	0.704877
JUNE								
ALPHA	0.709346	0.803929	1.48365	1.23454	1.21498	1.2725	1.37012	0.922798
BETA	0.636928	0.703207	0.690736	0.667166	0.678772	0.648103	0.620764	0.698741
JULY								
ALPHA	1.11132	1.06647	1.53507	1.60603	1.70227	1.71062	1.62504	1.32949
BETA	1.34914	1.24182	0.940918	1.03206	1.09598	1.02981	0.993492	1.41293
AUG								
ALPHA	1.08338	1.05225	1.42549	1.41172	1.53074	1.57268	1.37755	1.25499
BETA	1.52638	1.4639	1.13754	1.0631	1.13472	1.16913	1.01224	1.48531
SEPT								
ALPHA	1.09416	1.04755	1.3313	1.43539	1.46432	1.53644	1.37829	1.11365
BETA	1.52187	1.47154	1.14466	1.13525	1.14255	1.06609	1.0075	1.26781
OCT								
ALPHA	0.949153	0.91918	1.08311	1.24444	1.27625	1.31573	1.29263	1.00827
BETA	0.991671	1.02159	0.825809	0.886065	0.884151	0.824425	0.833387	0.899329
NOV								
ALPHA	0.883936	0.769158	1.07372	1.18119	1.13272	1.19686	1.18876	0.863263
BETA	0.783388	0.693435	0.690975	0.657111	0.634388	0.641789	0.642984	0.679467
DEC								
ALPHA	0.836488	0.792968	1.09195	1.17521	1.13777	1.14813	1.08179	0.838212
BETA	0.615868	0.586051	0.631749	0.598895	0.596497	0.567989	0.582038	0.574288

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	MILDERHALL							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0480973	0.0773984	0.195498	0.448483	0.824838	0.478922	0.137705	0.0795113
BETA	0.10287	0.101128	0.134816	0.163452	0.157398	0.167772	0.132044	0.110509
FEB								
ALPHA	0.0484284	0.0444924	0.267285	0.353744	0.404101	0.554382	0.200683	0.059967
BETA	0.113364	0.117771	0.142874	0.138492	0.170291	0.174349	0.154404	0.125976
MAR								
ALPHA	0.0353828	0.0718003	0.279819	0.867338	0.824473	0.692701	0.323915	0.0589404
BETA	0.124279	0.134594	0.157293	0.182489	0.21204	0.219712	0.203979	0.143988
APR								
ALPHA	0.0498331	0.172573	0.379682	0.881098	1.24995	1.02058	0.398157	0.108057
BETA	0.167025	0.193401	0.191975	0.233261	0.287792	0.297408	0.223332	0.188494
MAY								
ALPHA	0.0933714	0.294247	0.401514	1.05383	1.55335	1.22705	0.611827	0.21347
BETA	0.214303	0.234978	0.213388	0.289975	0.340224	0.346191	0.298561	0.269972
JUNE								
ALPHA	0.193844	0.309823	0.356035	0.729465	1.04774	0.819833	0.501385	0.267929
BETA	0.281327	0.249849	0.220492	0.255059	0.292125	0.293014	0.29144	0.277318
JULY								
ALPHA	0.179985	0.424172	0.582734	1.28415	2.0477	1.89092	1.04112	0.418422
BETA	0.251817	0.258849	0.217602	0.288944	0.349749	0.383174	0.346278	0.291804
AUG								
ALPHA	0.101344	0.334916	0.486005	1.12087	1.93553	1.53069	0.79651	0.24104
BETA	0.222917	0.230847	0.222584	0.3054	0.279749	0.38301	0.334859	0.284769
SEPT								
ALPHA	0.0902254	0.172722	0.412883	0.941534	1.50042	0.999097	0.423387	0.121317
BETA	0.201057	0.204204	0.242739	0.290813	0.347547	0.32842	0.28388	0.232574
OCT								
ALPHA	0.0538411	0.0939013	0.368882	0.880174	0.813199	0.492984	0.176338	0.0782634
BETA	0.144492	0.154788	0.177812	0.188892	0.244447	0.237067	0.209283	0.164811
NOV								
ALPHA	0.104994	0.0881495	0.271078	0.577817	0.789744	0.462137	0.143783	0.0938332
BETA	0.144822	0.138833	0.177404	0.181348	0.197981	0.203825	0.157821	0.134478
DEC								
ALPHA	0.0804937	0.0784782	0.214293	0.398444	0.329934	0.291341	0.149478	0.08714
BETA	0.122072	0.119908	0.146649	0.188834	0.147489	0.143377	0.158481	0.134388

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

WENAMA

	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.00337651	0.00327573	0.0216792	0.0519884	0.052023	0.0427714	0.0178267	0.0060126
BETA	0.114814	0.108298	0.144034	0.153548	0.153181	0.149816	0.14379	0.124068
FEB								
ALPHA	0.00977353	0.0153705	0.043544	0.077052	0.0820828	0.0750785	0.0386725	0.016199
BETA	0.132977	0.13454	0.142432	0.154949	0.16189	0.160029	0.163105	0.153294
MAR								
ALPHA	0.0219773	0.0269175	0.0647	0.062722	0.0790022	0.0889117	0.076642	0.0236457
BETA	0.192271	0.174429	0.174854	0.188844	0.201238	0.188318	0.204266	0.189391
APR								
ALPHA	0.0854377	0.156218	0.179008	0.180049	0.195921	0.217354	0.221535	0.1571
BETA	0.212915	0.187084	0.174427	0.199993	0.216608	0.199104	0.208384	0.254302
MAY								
ALPHA	0.192891	0.254449	0.191361	0.257149	0.449003	0.549224	0.55553	0.284956
BETA	0.24424	0.244548	0.206472	0.229997	0.248734	0.276502	0.304476	0.265386
JUNE								
ALPHA	0.503987	0.380444	0.351801	0.431076	1.09611	1.39775	0.99816	0.710995
BETA	0.267326	0.225083	0.224168	0.301012	0.393669	0.441051	0.344498	0.317967
JULY								
ALPHA	0.357412	0.415	0.343387	0.439597	0.797731	0.916923	0.677761	0.457076
BETA	0.2014	0.183984	0.175496	0.208484	0.280649	0.292379	0.26841	0.222747
AUG								
ALPHA	0.269299	0.381348	0.417421	0.50971	0.849004	1.00185	0.749846	0.357044
BETA	0.168132	0.1622	0.151987	0.185854	0.26968	0.285261	0.240963	0.195537
SEPT								
ALPHA	0.0826127	0.155373	0.332035	0.352894	0.414798	0.413684	0.290423	0.113145
BETA	0.141343	0.145618	0.149383	0.166612	0.174016	0.173739	0.159634	0.145485
OCT								
ALPHA	0.0610977	0.0438744	0.263429	0.292132	0.302391	0.228491	0.11892	0.0811082
BETA	0.116891	0.117837	0.133414	0.127619	0.133412	0.129376	0.139182	0.123881
NOV								
ALPHA	0.0264496	0.0237168	0.1084	0.191844	0.188824	0.0892967	0.0409862	0.0377244
BETA	0.141175	0.134302	0.158182	0.166769	0.159876	0.127742	0.127831	0.140167
DEC								
ALPHA	0.028189	0.0228233	0.0298895	0.126922	0.124774	0.0888796	0.0612169	0.037884
BETA	0.148288	0.148548	0.14384	0.177237	0.173733	0.151844	0.161435	0.158868

PARAMETERS FOR S-DISTRIBUTION - SAY COVER

	OKINAWA							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.482127	0.444932	0.781221	0.916921	1.142	1.02649	0.791849	0.552153
BETA	0.253992	0.232489	0.270317	0.292226	0.327696	0.303134	0.271574	0.251852
FEB	.	.	.	.	.	.	.	.
ALPHA	0.349923	0.279472	0.42838	0.488559	0.748273	0.721052	0.484591	0.24351
BETA	0.204753	0.18268	0.201089	0.235409	0.248217	0.23194	0.192899	0.205167
MAR	.	.	.	.	.	.	.	.
ALPHA	0.253359	0.295124	0.424444	0.45051	0.782448	0.748478	0.547129	0.375095
BETA	0.171989	0.163477	0.177493	0.219217	0.243175	0.238259	0.214703	0.21042
APR	.	.	.	.	.	.	.	.
ALPHA	0.302434	0.350842	0.492738	0.48023	0.842798	0.708835	0.514119	0.275437
BETA	0.215903	0.20453	0.235401	0.283117	0.269017	0.252254	0.229538	0.21233
MAY	.	.	.	.	.	.	.	.
ALPHA	0.32089	0.396394	1.04547	1.16847	1.27709	1.34719	0.897208	0.433594
BETA	0.218123	0.227453	0.256916	0.243989	0.269341	0.273154	0.228889	0.219885
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.429988	0.530529	1.24404	1.50834	1.41703	1.55882	1.21803	0.639418
BETA	0.259335	0.270874	0.255819	0.265121	0.290325	0.269057	0.234044	0.297443
JULY	.	.	.	.	.	.	.	.
ALPHA	0.562116	0.596535	0.977075	1.22834	1.25547	1.32454	1.0428	0.611677
BETA	0.630182	0.676707	0.490079	0.499637	0.477237	0.492567	0.44787	0.548883
AUG	.	.	.	.	.	.	.	.
ALPHA	0.457574	0.419479	0.87071	1.11902	.33239	1.28059	0.904491	0.587044
BETA	0.525108	0.502588	0.517917	0.494445	0.524376	0.447979	0.423161	0.538193
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.381251	0.407575	0.766588	1.20854	1.34654	1.21184	0.813328	0.522245
BETA	0.588051	0.60829	0.561315	0.631447	0.671024	0.584917	0.498988	0.579984
OCT	.	.	.	.	.	.	.	.
ALPHA	0.333112	0.375933	0.691074	0.843859	0.981514	0.850102	0.600443	0.488045
BETA	0.412625	0.448324	0.477895	0.489143	0.483085	0.434883	0.432292	0.447512
NOV	.	.	.	.	.	.	.	.
ALPHA	0.29898	0.297431	0.446737	0.69752	0.922278	0.856065	0.516404	0.384473
BETA	0.300449	0.303438	0.339161	0.357444	0.383484	0.393487	0.334271	0.279674
DEC	.	.	.	.	.	.	.	.
ALPHA	0.444431	0.338149	0.483431	0.828748	0.940901	0.877635	0.548883	0.47318
BETA	0.275497	0.243407	0.301407	0.317288	0.338844	0.389448	0.38475	0.276447

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	PATRICK							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0857347	0.0430995	0.151443	0.20497	0.347283	0.33449	0.209687	0.1253
BETA	0.289174	0.245678	0.237453	0.238988	0.301594	0.331284	0.330416	0.362986
FEB								
ALPHA	0.0538794	0.0934854	0.150049	0.13437	0.233094	0.222501	0.193274	0.0741447
BETA	0.275947	0.281127	0.258012	0.217071	0.29154	0.280499	0.303935	0.304767
MAR								
ALPHA	0.103898	0.123832	0.145058	0.213562	0.201064	0.349446	0.246137	0.0875119
BETA	0.295379	0.312905	0.26294	0.280214	0.260777	0.338469	0.307391	0.252099
APR								
ALPHA	0.14334	0.128097	0.275414	0.287422	0.353573	0.288546	0.244781	0.158627
BETA	0.496043	0.454947	0.384305	0.421627	0.53281	0.457428	0.489298	0.525705
MAY								
ALPHA	0.110149	0.27741	0.3551	0.45348	0.405941	0.333382	0.290416	0.201752
BETA	0.367475	0.545991	0.417463	0.537175	0.501867	0.369382	0.344544	0.400736
JUNE								
ALPHA	0.354641	0.433215	0.52561	0.80482	0.646534	0.643078	0.742018	0.428367
BETA	0.523738	0.649272	0.479967	0.605393	0.494961	0.387072	0.357903	0.414548
JULY								
ALPHA	0.352738	0.368394	0.510339	0.828276	0.770916	0.722788	0.607741	0.298257
BETA	0.527832	0.725017	0.477261	0.525711	0.425589	0.203422	0.238896	0.324813
AUG								
ALPHA	0.25854	0.425091	0.786379	0.884752	0.706209	0.588892	0.414909	0.311995
BETA	0.52644	0.889815	0.749977	0.715449	0.575296	0.401058	0.30891	0.444691
SEPT								
ALPHA	0.423915	0.414446	0.653349	0.790408	0.711573	0.644313	0.621788	0.240017
BETA	0.59361	0.639318	0.560453	0.517993	0.448982	0.361093	0.375309	0.466519
OCT								
ALPHA	0.153187	0.208798	0.353477	0.399884	0.388941	0.427394	0.31434	0.198809
BETA	0.389007	0.399817	0.344712	0.344798	0.385485	0.323474	0.282715	0.240739
NOV								
ALPHA	0.0948309	0.0778788	0.128188	0.169889	0.259262	0.249798	0.117788	0.0788987
BETA	0.439897	0.39761	0.358888	0.370989	0.544363	0.488873	0.341334	0.388837
DEC								
ALPHA	0.0341238	0.0410132	0.0744788	0.0618888	0.228981	0.222883	0.188894	0.0888888
BETA	0.348481	0.327833	0.309388	0.288432	0.457119	0.447487	0.274884	0.284234



PARAMETERS FOR S-DISTRIBUTION - SKY COVER

SAIGON

	0-2	3-5	4-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	1.24167	1.2149	1.35042	1.03725	1.48333	1.8045	1.41227	1.17844
BETA	1.45216	1.40074	1.16222	1.15957	1.18293	1.15118	1.14372	1.23165
FEB	.	.	.	.	.	.	.	.
ALPHA	1.33027	1.48451	1.5949	1.30718	1.94069	1.96742	1.76458	1.76769
BETA	2.4918	2.30534	1.64306	1.50816	1.64043	1.73779	2.37441	3.19989
MAR	.	.	.	.	.	.	.	.
ALPHA	1.86105	1.71777	1.45234	1.34485	2.16055	1.90845	1.85843	2.34918
BETA	3.25877	2.52092	1.18973	1.239	1.57074	2.03362	2.60265	5.40649
APR	.	.	.	.	.	.	.	.
ALPHA	1.94674	2.09177	2.09102	2.29727	3.16339	1.9454	1.69292	1.87083
BETA	1.87315	2.23164	1.57325	1.57694	1.86393	1.80323	1.33388	1.88672
MAY	.	.	.	.	.	.	.	.
ALPHA	2.08867	2.03011	2.42374	3.59818	5.33947	4.18379	3.74143	2.09439
BETA	0.718803	0.953691	0.892649	1.25233	1.57123	0.972413	0.689222	0.831217
JUNE	.	.	.	.	.	.	.	.
ALPHA	2.18023	2.07626	2.48984	3.80398	6.81402	8.27792	7.05837	2.47832
BETA	0.721261	0.940682	0.901102	1.30189	1.83267	1.61119	1.02049	0.596688
JULY	.	.	.	.	.	.	.	.
ALPHA	2.11481	2.10062	3.17092	4.32151	6.19785	6.47561	6.82031	2.32853
BETA	0.65431	0.809394	0.895979	1.21703	1.52818	1.21107	0.933388	0.53717
AUG	.	.	.	.	.	.	.	.
ALPHA	2.75463	2.52316	4.24966	6.37744	9.92711	12.2592	8.72975	3.33283
BETA	0.672824	0.782493	1.01484	1.63782	2.31819	2.33991	1.09829	0.8992
SEPT	.	.	.	.	.	.	.	.
ALPHA	2.83386	2.42456	4.51689	6.03513	10.301	11.2607	6.27186	2.99323
BETA	0.666339	0.788994	1.0678	1.58823	2.80163	2.13877	0.879996	0.582116
OCT	.	.	.	.	.	.	.	.
ALPHA	2.48743	2.26003	3.21309	3.21016	5.46466	7.85181	4.14188	2.81629
BETA	0.816492	0.93215	0.929847	1.10891	1.46683	1.62471	0.798823	0.788452
NOV	.	.	.	.	.	.	.	.
ALPHA	2.14883	1.88439	1.7929	1.86831	4.02206	3.42488	2.67824	2.21676
BETA	1.28257	1.17304	0.779964	0.890965	1.38163	1.01266	0.853388	1.00928
DEC	.	.	.	.	.	.	.	.
ALPHA	1.99821	1.61384	1.83627	1.88829	3.78887	2.86873	2.09666	1.70888
BETA	1.28864	1.39412	0.834486	1.03372	1.19818	1.08888	0.985131	1.28888

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	SHENYA							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.634603	0.489856	0.724215	1.44504	1.67812	1.56728	0.884991	0.715901
BETA	0.190712	0.180322	0.183023	0.230113	0.261318	0.252446	0.187696	0.192005
FEB								
ALPHA	0.708179	0.763479	1.06601	1.60586	1.70973	1.95402	1.3169	0.851931
BETA	0.19966	0.189034	0.218876	0.267644	0.276944	0.278448	0.21372	0.210016
MAR								
ALPHA	0.614254	0.708347	1.23075	1.60881	1.71669	1.80741	1.36727	0.727361
BETA	0.173222	0.172039	0.211304	0.244841	0.259336	0.272481	0.217604	0.186135
APR								
ALPHA	0.53253	0.913014	1.44134	1.44175	1.63907	1.72059	1.2784	0.76881
BETA	0.109271	0.126026	0.162611	0.1632	0.17963	0.19924	0.162104	0.132446
MAY								
ALPHA	0.738166	1.18824	1.75889	1.47936	1.3391	1.06904	1.16151	0.942694
BETA	0.0710025	0.0832845	0.103387	0.111137	0.126337	0.116364	0.117242	0.0880082
JUNE								
ALPHA	0.46228	1.10058	1.38647	1.91338	1.12398	1.17071	0.904242	0.746858
BETA	0.0222432	0.032001	0.0445413	0.0731988	0.0723335	0.0764261	0.0537217	0.0315621
JULY								
ALPHA	0.499937	0.81367	1.14775	1.1888	0.921775	0.698837	0.740881	0.446218
BETA	0.0245236	0.0260576	0.0293934	0.0425134	0.0482309	0.0388052	0.0393614	0.0244034
AUG								
ALPHA	0.187825	0.388897	1.12728	0.991384	0.882733	0.788685	0.618832	0.32072
BETA	0.0328432	0.0357078	0.0644738	0.0701123	0.0825326	0.0684485	0.0597598	0.0449499
SEPT								
ALPHA	0.258347	0.339317	0.674713	0.717118	0.783116	0.687882	0.614214	0.342724
BETA	0.104212	0.113226	0.148921	0.166198	0.178726	0.174013	0.156073	0.124184
OCT								
ALPHA	0.306283	0.54889	0.872634	1.23269	1.26327	1.2388	0.9969	0.677489
BETA	0.193472	0.201447	0.23338	0.271239	0.274883	0.271988	0.231395	0.223445
NOV								
ALPHA	0.708339	0.708475	0.878831	1.88779	1.69868	1.88849	0.971648	0.789632
BETA	0.246176	0.216284	0.238664	0.286966	0.298638	0.298394	0.2661	0.237119
DEC								
ALPHA	0.643834	0.680242	0.686689	1.38418	1.6388	1.4912	0.810431	0.677924
BETA	0.221568	0.20079	0.198983	0.287688	0.28222	0.280439	0.218178	0.188998

PARAMETERS FOR S-DISTRIBUTION - SAY COVER

	THULE							
	0-2	3-5	4-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.022431	0.020765	0.0222171	0.0552733	0.0629818	0.0592623	0.0271254	0.0277937
BETA	0.203903	0.200415	0.201061	0.247199	0.225415	0.254504	0.21997	0.214958
FEB	.	.	.	.	.	.	.	.
ALPHA	0.0220235	0.0216335	0.0592671	0.0620273	0.0609788	0.0708242	0.045577	0.0251821
BETA	0.183982	0.192278	0.230125	0.180931	0.174633	0.195859	0.208906	0.190086
MAR	.	.	.	.	.	.	.	.
ALPHA	0.0280555	0.0407468	0.0937227	0.0765441	0.0537349	0.0487362	0.0719751	0.0392428
BETA	0.243286	0.285311	0.277459	0.235942	0.202964	0.206946	0.243487	0.240073
APR	.	.	.	.	.	.	.	.
ALPHA	0.0365179	0.0461979	0.0583546	0.0471613	0.0310981	0.0449249	0.03317	0.0416614
BETA	0.199678	0.218907	0.23672	0.20737	0.180066	0.20487	0.192932	0.20716
MAY	.	.	.	.	.	.	.	.
ALPHA	0.108346	0.1005	0.105571	0.120245	0.147078	0.153821	0.152676	0.152836
BETA	0.152451	0.147875	0.153382	0.14923	0.188866	0.194843	0.21129	0.20146
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.188722	0.246954	0.216607	0.223771	0.273111	0.221019	0.21275	0.146444
BETA	0.15385	0.164374	0.159234	0.172085	0.201828	0.183919	0.183563	0.153186
JULY	.	.	.	.	.	.	.	.
ALPHA	0.255024	0.212268	0.215611	0.277812	0.30786	0.339353	0.276385	0.264791
BETA	0.149266	0.132093	0.135086	0.188273	0.173118	0.191233	0.171387	0.160914
AUG	.	.	.	.	.	.	.	.
ALPHA	0.148442	0.170945	0.177057	0.21582	0.24513	0.14542	0.148787	0.178898
BETA	0.140637	0.150102	0.153798	0.173677	0.183569	0.188139	0.168381	0.189438
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.0753277	0.0974516	0.146385	0.136432	0.152234	0.123006	0.0973836	0.0726385
BETA	0.162218	0.14989	0.167283	0.169912	0.172164	0.151683	0.14179	0.138878
OCT	.	.	.	.	.	.	.	.
ALPHA	0.035229	0.0616779	0.124553	0.108505	0.117939	0.131797	0.0884716	0.048887
BETA	0.136783	0.154029	0.154176	0.127375	0.138281	0.146607	0.133469	0.138384
NOV	.	.	.	.	.	.	.	.
ALPHA	0.0355546	0.0458883	0.0643982	0.118796	0.127669	0.0982844	0.0388777	0.0312438
BETA	0.159692	0.171744	0.194663	0.28275	0.181697	0.194894	0.157896	0.18848
DEC	.	.	.	.	.	.	.	.
ALPHA	0.0248862	0.0186323	0.0222436	0.036381	0.0772844	0.0398483	0.0197623	0.0081486
BETA	0.172678	0.168842	0.187288	0.211173	0.321827	0.308014	0.178887	0.173886

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	TORREJON							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.0722673	0.0393804	0.117978	0.127748	0.181454	0.280994	0.232032	0.118749
BETA	0.193404	0.172838	0.179238	0.149486	0.172984	0.21448	0.259937	0.242802
FEB								
ALPHA	0.0963527	0.0778587	0.13544	0.147778	0.213631	0.272099	0.218431	0.112625
BETA	0.276281	0.234871	0.235273	0.209477	0.229049	0.236221	0.292008	0.283112
MAR								
ALPHA	0.122914	0.108023	0.149754	0.194542	0.323242	0.374495	0.290888	0.283492
BETA	0.316425	0.279499	0.244293	0.227742	0.250512	0.27533	0.293167	0.370277
APR								
ALPHA	0.201079	0.247039	0.308422	0.382642	0.547443	0.654531	0.547884	0.387344
BETA	0.390399	0.415279	0.329591	0.344107	0.353824	0.37873	0.403211	0.435404
MAY								
ALPHA	0.219372	0.272777	0.252574	0.253474	0.419205	0.393833	0.449787	0.337291
BETA	0.500237	0.535444	0.385832	0.358189	0.394404	0.482988	0.409534	0.520851
JUNE								
ALPHA	0.177545	0.220739	0.222159	0.276784	0.443998	0.512408	0.38187	0.240095
BETA	0.525183	0.521113	0.404303	0.454082	0.507371	0.488791	0.430478	0.588292
JULY								
ALPHA	0.0783832	0.134392	0.128287	0.198214	0.323891	0.414194	0.304825	0.158443
BETA	0.780137	0.916145	0.791475	0.894017	1.03852	1.03123	0.908272	0.830095
AUG								
ALPHA	0.0728272	0.101298	0.194448	0.209098	0.71401	0.302448	0.233924	0.147257
BETA	0.644612	0.693486	0.748344	0.828245	0.793949	0.723433	0.698334	0.746413
SEPT								
ALPHA	0.104474	0.104897	0.219223	0.251344	0.34401	0.388128	0.341249	0.214823
BETA	0.471541	0.442822	0.44218	0.448442	0.443887	0.488237	0.514864	0.627672
OCT								
ALPHA	0.044848	0.070889	0.187138	0.241494	0.299843	0.297408	0.215774	0.0961719
BETA	0.387731	0.311988	0.322499	0.323783	0.334888	0.347899	0.374743	0.34328
NOV								
ALPHA	0.0871228	0.0674689	0.199338	0.171538	0.288728	0.38384	0.230888	0.188436
BETA	0.281884	0.234988	0.22138	0.188984	0.234884	0.248871	0.294638	0.289138
DEC								
ALPHA	0.0429818	0.0888121	0.138888	0.198872	0.2489	0.288843	0.191484	0.186734
BETA	0.219427	0.287741	0.247833	0.328746	0.388887	0.244892	0.288811	0.278344

PARAMETERS FOR S-DISTRIBUTION - SKY COVER

	TRIPOLI							
	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
JAN								
ALPHA	0.170903	0.142583	0.332771	0.361322	0.365924	0.424559	0.308911	0.247238
BETA	0.461147	0.402044	0.454484	0.4222	0.427033	0.451531	0.478121	0.503898
FEB	.	.	.	.	.	.	.	.
ALPHA	0.134022	0.145282	0.361032	0.294434	0.337834	0.341273	0.275267	0.207851
BETA	0.493995	0.482502	0.519698	0.442992	0.467397	0.478819	0.519027	0.571218
MAR	.	.	.	.	.	.	.	.
ALPHA	0.164391	0.223678	0.394934	0.384138	0.376744	0.344978	0.284255	0.190921
BETA	0.503393	0.539	0.492448	0.501802	0.511617	0.47771	0.491334	0.520914
APR	.	.	.	.	.	.	.	.
ALPHA	0.142428	0.233444	0.327519	0.270779	0.24775	0.207972	0.240754	0.171183
BETA	0.488238	0.539451	0.459145	0.441134	0.435435	0.385451	0.47438	0.509365
MAY	.	.	.	.	.	.	.	.
ALPHA	0.10822	0.178192	0.202709	0.185525	0.183854	0.177724	0.208085	0.148314
BETA	0.516378	0.541581	0.438321	0.458988	0.475101	0.445315	0.49492	0.554601
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.0498187	0.133496	0.161475	0.129734	0.112859	0.0980144	0.130254	0.0850718
BETA	0.509138	0.580535	0.53693	0.561246	0.571421	0.530212	0.576712	0.612961
JULY	.	.	.	.	.	.	.	.
ALPHA	0.0607976	0.107261	0.193181	0.234407	0.213324	0.116826	0.105852	0.0784312
BETA	0.799933	0.788932	0.947935	1.42181	1.41572	1.14975	1.00298	0.958728
AUG	.	.	.	.	.	.	.	.
ALPHA	0.0920799	0.120257	0.172121	0.232838	0.19611	0.11129	0.118434	0.107542
BETA	1.12133	0.979109	1.03415	1.42031	1.57507	1.16897	1.19527	1.30039
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.11383	0.198484	0.29928	0.287934	0.231229	0.203993	0.191158	0.144886
BETA	0.832524	0.966879	0.878513	0.85739	0.806128	0.739002	0.79007	0.843399
OCT	.	.	.	.	.	.	.	.
ALPHA	0.175333	0.203401	0.433375	0.471378	0.429859	0.398952	0.279754	0.212188
BETA	0.657839	0.638169	0.65844	0.690133	0.629619	0.58394	0.631492	0.692643
NOV	.	.	.	.	.	.	.	.
ALPHA	0.215674	0.287866	0.307219	0.436167	0.538629	0.501972	0.347883	0.253576
BETA	0.572231	0.625132	0.569693	0.493849	0.588495	0.588983	0.612448	0.597948
DEC	.	.	.	.	.	.	.	.
ALPHA	0.214888	0.199006	0.436737	0.373288	0.441475	0.481088	0.337482	0.249851
BETA	0.482791	0.449887	0.482445	0.417657	0.439562	0.486743	0.495456	0.58876

# PARAMETERS FOR S-DISTRIBUTION - SKY COVER

## NAKE ISLAND

JAN	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23
ALPHA	0.609177	0.595923	0.645092	0.597537	0.630300	0.644472	0.643531	0.603541
BETA	0.851074	0.759403	0.680044	0.676344	0.78894	0.863182	0.890104	0.921001
FEB	.	.	.	.	.	.	.	.
ALPHA	0.54591	0.411845	0.439254	0.420228	0.569907	0.609017	0.54544	0.535747
BETA	0.84751	0.810327	0.805927	0.819708	0.837904	0.895941	0.871453	0.844981
MAR	.	.	.	.	.	.	.	.
ALPHA	0.620394	0.650958	0.691325	0.651255	0.700258	0.721019	0.751512	0.689484
BETA	0.990052	0.908855	0.781109	0.818851	0.929488	0.921341	0.938834	1.10288
APR	.	.	.	.	.	.	.	.
ALPHA	0.676009	0.701711	0.818035	0.692655	0.704214	0.821573	0.804728	0.701422
BETA	0.893789	0.81207	0.784401	0.72227	0.744485	0.847321	0.894315	0.957017
MAY	.	.	.	.	.	.	.	.
ALPHA	0.765117	0.819331	0.781832	0.713948	0.749254	0.845333	0.834083	0.774913
BETA	1.00204	0.938195	0.728818	0.714441	0.759274	0.774544	0.804144	0.998484
JUNE	.	.	.	.	.	.	.	.
ALPHA	0.925179	0.874774	0.918502	0.851122	0.844831	0.820094	0.770071	0.841013
BETA	1.34304	1.03834	0.843002	0.82001	0.755921	0.733094	0.742581	1.15785
JULY	.	.	.	.	.	.	.	.
ALPHA	0.772195	0.7912	0.883444	0.744851	0.740488	0.762548	0.728349	0.70524
BETA	0.704747	0.611075	0.492413	0.44402	0.42598	0.390011	0.377248	0.389187
AUG	.	.	.	.	.	.	.	.
ALPHA	0.572249	0.643845	0.807131	0.732914	0.744359	0.751902	0.69248	0.574122
BETA	0.478932	0.522951	0.492778	0.435258	0.439911	0.411282	0.380514	0.489887
SEPT	.	.	.	.	.	.	.	.
ALPHA	0.695425	0.789394	0.774874	0.710027	0.783471	0.788018	0.640824	0.599499
BETA	0.645282	0.724593	0.549194	0.474111	0.484273	0.484797	0.445429	0.543534
OCT	.	.	.	.	.	.	.	.
ALPHA	0.603013	0.673048	0.743718	0.694884	0.631257	0.689497	0.63737	0.584584
BETA	0.581874	0.62991	0.5557	0.491473	0.443899	0.448129	0.474227	0.54134
NOV	.	.	.	.	.	.	.	.
ALPHA	0.742114	0.751159	0.834543	0.744935	0.749984	0.824479	0.847391	0.719989
BETA	1.0502	1.00859	0.990887	0.911319	0.884494	0.947614	1.08888	0.992437
DEC	.	.	.	.	.	.	.	.
ALPHA	0.744447	0.774184	0.770478	0.647951	0.73101	0.791969	0.772992	0.677784
BETA	1.25013	1.25432	0.987313	0.874399	0.977442	1.03431	1.0444	1.11582